

**AMENDMENTS TO THE SPECIFICATION WITH MARKINGS TO SHOW
CHANGES MADE**

Replace the current title with the following:

**--DEVICE FOR PRODUCING PHYSICALLY EXPANDED STRUCTURAL FOAMS
DURING AN INJECTION MOLDING PROCESS INVOLVING THE USE OF
DYNAMIC MIXING ELEMENTS--**

Delete the list on page 14;

Amend paragraph [002] as follows:

-- [0002] From German patent DE 24 02 203 C3 and U.S. patent 5,297,948, devices are known for the production of foamed plastic molded parts in ~~accordance with the preamble of claim 1~~, limited to a known extrusion method wherein the blowing agent is added in only some locally defined area. This invention is a further development of the device which is claimed in our patent application EP 1 256 430 A1 for the production of foamed plastic molded parts. This said device relates to an injection molding machine which is used for the production of a foamed plastic molded part. In order to produce a foamable plastic melt, a blowing agent is added to the plastic material and generates gas bubbles in the injection molding tool as a result of an expansion of blowing agent present in solution under pressure in the melt and a pressure drop during injection into the injection molding tool, whereby the gas bubbles are frozen as the melt cools down as a consequence of an increase in viscosity and finally forming the foamed texture. The device and method which are introduced by the EP 1 256 430 A1, utilize physical blowing agents. The supply of the physical blowing agent is made

possible through the use of a porous casing. This porous casing is mounted at the screw piston, preferably in the area between the metering zone and the adjacently located downstream mixing zone. The porous casing is made from a porous or permeable material which permits the expulsion of the blowing agent under pressure in order for it to dissolve within the melt. Due to its large surface, this thin-walled cylindrically shaped casing is extraordinarily suited for bringing the gas into polymer melts of different composition. The solution as introduced by the EP 1 256 430 A1 relates to a gassing step, followed by a mixing step carried out by means of a mixing element mounted at the screw piston. The gassing treatment is carried out in a sector of the screw piston, which means that the gassing elements carry out the motions of the screw piston. Due to the use of the gassing elements in only a sector of the screw piston, a conventional injection molding machine can be fitted with the suitable screw piston so that only the screw piston needs to be exchanged in the entire installation in order to carry out the production of foamed plastic molded parts, thereby greatly reducing investment costs of the entire installation. While use of gassing equipment in the screw piston is known from DE 20 53 646 B, there, the openings for the blowing agent are configured as injection nozzles terminate in the distributor head. Through the blowing agent openings, the melt is charged with the blowing agent by means of a jet stream. If the embodiment of the gassing element is a porous casing which moves together with the screw piston in axial direction and at the same time also carries out the pistons rotational motion, it can charge the melt with the blowing agent in a uniform manner, as the porous surface does not promote release of only a single jet

stream; at least, a bundle of jet streams is being released, although generally, with the device according to the invention, as also in EP 1 256 430 A1, the polymer melt is supplied with blowing agent bubbles. In the immediate vicinity of the porous casing, mixing between the gas and the polymer melt remains incomplete during the gas charge since the mixing-promoting shearing forces at the outer surface of the casing, are relatively small.--